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Thomas Bechtold

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EXAMINER

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Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/521,917
Filing Date: January 20, 2005
Appellant(s): BECHTOLD ET AL.

Ashley I. Pezzner
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed January 14, 2008 appealing from the Office action mailed August 31, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 6,312,583	Bechtold	11-2001
US 5,873,912	Carlough	2-1999
WO 1999/11716	Bechtold	3-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 1-6,8-12,16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bechtold et al. (WO 99/11716). Since the WO 99/11716 reference is not in English, the English equivalent, US 6,312,583, is being relied upon for citation purposes.

Bechtold et al. teach dyeing apparatus of figure 1, where the apparatus includes an electrolytic cell with a cation exchange membrane which separates the anolyte and catholyte and a catholyte reservoir in which the dyeing takes place (column 2, lines 30-50). Bechtold et al. further teach reducing dyes such as Sulfur Black 1 in alkaline solutions comprising NaOH as the anolyte and at temperatures of 40-50°C (column 2, lines 50-65; column 3, lines 1-10). Bechtold et al. further teach that these dyes have high affinity to fiber materials, especially cellulose (column 1, lines 10-20). Bechtold et al. further teach dye concentrations of 100 g/L (claim 1) , 40-50% dispersion of sulfur

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black 1 at 200 ml/L (~ 80-100 g/L) and 40-50% dispersion of sulfur black 1 at 20 ml/L (~ 8-10 g/L).

Bechtold et al. do not teach dyeing fiber materials simultaneously with reducing the dye by electrochemical means.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods of Bechtold et al. by dyeing fibers in the catholyte reservoir while electrochemical reduction of the dye is occurring because Bechtold et al. clearly teach that the reservoir is where the dyeing procedure can take place and that the dyes can be used for the purpose of dyeing as they also have high affinity for fibers particularly cellulose (column 1, lines 15-20). One would further expect that the dye solution delivered to the reservoir would maintain the dye concentration and temperature properties it had in the electrolytic cell. One of ordinary skill in the art would expect the methods of Bechtold to encompass the instantly claimed limitations absent unexpected results.

2. Claims 6-8 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bechtold et al. (WO 99/11716) and further in view of Carlough (US 5,873,912). Since the WO 99/11716 reference is not in English, the English equivalent, US 6,312,583, is being relied upon for citation purposes.

Bechtold et al. are relied upon as described in paragraph 1.

Bechtold et al. do not teach dyeing in inert environments and at temperatures of 60-95°C.

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Carlough teaches dyeing cellulosic fibers blended with polyester or polyamides (column 2, lines 1-10) by applying Sulphur Black 1 (column 3, line 19) at temperatures of 35-130°C (column 4, lines 60-65) with dye concentrations of 0.5-10 g/L (column 5, lines 45-50) under inert atmosphere conditions (column 6, lines 15-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods of Bechtold et al. by dyeing cellulosic blends at the temperatures and inert conditions as taught by Carlough because Carlough teaches these conditions provide improved sulphur dyeings of cellulosic mixed fiber materials (column 1, lines 45-61). One of ordinary skill in the art would have been motivated to combine the teachings of the references absent unexpected results.

(10) Response to Argument

3. Claims 1-6,8-12,16 and 17

The applicant argues that the teachings of Bechtold require mediator systems which reduce the dye. The examiner argues that applicant's arguments regarding the mediator system of US Patent 6,814,763, which is the English counterpart and the national stage entry of WO 01/65000, is not relevant to the rejections at hand since this reference is neither cited in the rejection by the examiner nor the applicant's instant specification page 3, lines 16-23. Furthermore, Bechtold clearly teaches in claim 1 that sulfur dyes are cathodically reduced and makes no mention of mediator systems.

The applicant further argues that Bechtold only teaches dyeing in the catholyte reservoir after the reduction of dye step and when the respective equipment is not

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operative and cites the examples. The examiner argues no such teaching of the lack of operation of the electrochemical cell is disclosed by Bechtold. While the examples are directed towards using the reduced dye for dyeing, they are not limiting of the invention. A reference is not limited to the working examples, see *In re Fracalossi*, 215 USPQ 569 (CCPA 1982). The examiner argues that Bechtold clearly teaches that container 10 forms the catholyte reservoir in which the dyeing procedure can also take place and the catholyte is reduced by the circulation flow in the circuit 9 (column 2, lines 35-50). The examiner further argues that the dye reduction step comprises a portion of the dyeing process and the equipment is clearly operative to reduce the dye. Finally, the examiner asserts that performing the steps sequentially vs. simultaneously does not render the claims non-obvious. "As a general rule, no invention is involved in the broad concept of performing simultaneously operations which have previously been performed in sequence ." *In re Tatincloux and Guy*, 108 USPQ 125(CCPA 1955).

4. Claims 6-8 and 13-15

The applicant argues that the combination of Bechtold and Carlough does not render the invention obvious because the process of Carlough does not involve electrochemical means and utilizes expensive reducing agents which results in water pollution and a closed vessel with reduced oxygen levels which is also expensive. The examiner argues that it would be obvious to incorporate the temperature limitations, fabric types and inert atmosphere of Carlough into the method steps of Bechtold because both references are directed towards optimization of dyeing conditions when utilizing the same dye Sulfur Black 1. Carlough is relied upon to demonstrate that Sulfur

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Black 1 is conventionally utilized to dye fibrous materials such as cellulose, polyester and polyamide fibers and blends thereof (column 2, lines 1-20; column 3, line 19) and further that this process may be optimally achieved at temperatures in the range of 35-130°C, preferably 60-100°C (column 4, lines 60-65) and by maintenance of an inert atmosphere above the dyebath (column 6, lines 20-26). The examiner asserts that the dyeing procedures of Carlough require the same reduced dye of similar concentration as Bechtold and clearly demonstrate that inert conditions reduce the undesired oxidation of reduced sulfur dye in the dyebath, resulting in a more effective and more reproducible dyeing operation (column 9, lines 1-15). Bechtold also recognizes that oxidation of dye by air during the dyeing process is detrimental and must be controlled. Nothing unobvious is seen in adding additional means to control dye oxidation during dyeing as it is conventionally known to be detrimental.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Amina Khan/

Examiner, Art Unit 1796

April 9, 2008

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April 10, 2009